

The objection is respectfully traversed. As amended above, no multiple dependent claim is now dependent from another multiple dependent claims. Accordingly, Applicant requests that the objection be withdrawn and that the claims be examined on the merits.

35 U.S.C. § 112 Claims 5 and 6 stand rejected under 35 U.S.C. § 112, second paragraph, based on the parenthetical phrase in claim 5, line 3. The rejection is respectfully traversed. By the foregoing amendments, the parenthetical is removed from claim 5. Accordingly, Applicant requests that the rejection be withdrawn.

35 U.S.C. § 103 Claims 1 - 4 and 6 are rejected under 35 U.S.C. § 103(a) over Schwertfeger et al (U.S. 5,888,425) in view of Smith (U.S. 3,635,743). Schwertfeger et al is cited by the Examiner as disclosing a process for preparing modified aerogels, and is acknowledged by the Examiner to lack disclosure of using a disiloxane of claimed formula (I) as the silylating agent. The Examiner cites the Smith patent as disclosing the use of disiloxanes, specifically the use of hexamethyldisiloxane, 1,1,3-divinyltetramethyldisiloxane, and 1,3-diphenyltetramethyldisiloxane. The Examiner asserts that it would have been obvious for one of ordinary skill in the art to use the silylating agent of Smith in the process of Schwertfeger et al with the expectation of similar results. The rejection is respectfully traversed.

The Schwertfeger et al patent is discussed in the specification of the present application. In the middle and next paragraphs on page 8 of the application, DE-C 19502453 is discussed, which is the priority document for the cited Schwertfeger et al patent. It is pointed out there that the chlorine-free silylation agents used in Schwertfeger et al represent a very high cost factor.

Moreover, the Smith patent does not cure the acknowledged deficiency of Schwertfeger et al. The silica fillers of Smith are not lyogels as called for in the claims of the present application. Rather, Smith is directed to the treatment of **pyrogenic** silica filler.

“The filler of the present invention produced by the above process is a treated **pyrogenic** silica filler having a surface area of ...

“The **pyrogenic** silica filler utilized in the practice of this invention has a surface area of at least ... The **pyrogenic** filler can be made from silica filler produced by burning silanes, for example, silicon tetrachloride, ...”

(Column 1, lines 52 - 65 of the Smith patent.)

In contrast, the term “lyogel” is understood to mean a gel in the gel pores of which there is at least one solvent. Hydrogels and organogels are examples of lyogels, with hydrogels typically being understood to have more than 50 percent by volume of water in the solvent phase in the gel pores.

Smith teaches a pyrogenic silica having little or no water. Smith states that silica filler having from 0.2 to 2% by weight of water “may be used directly in the practice of the present invention.” (Column 1, lines 66 - 71 of the Smith patent.) Smith relates to a powder system and discloses treating powder material where only trace amounts of water are present. In contrast, the present invention involves a liquid system. One of ordinary skill would not be led to treat lyogel in a liquid system by the dry powder method of Smith.

It is well established that the teachings of one citation may not properly be combined with those of another unless the suggestion for the combination is found within those citations. Nothing in Smith suggests that its treatment of pyrogenic silica filler would be useful in the process of Schwertfeger et al. The surface chemistry of pyrogenic silica fillers, such as employed in Smith, differs significantly from the surface chemistry of lyogels required by the claims of the present application.

Moreover, the combination is inconsistent with Schwertfeger et al. Specifically, Schwertfeger et al expressly discusses, in the Background portion of the patent, that prior known methods of preparing aerogels, including subcritical drying (Column 1, lines 51 - 67) and the use of waterglass as starting material (Column 2, lines 18 - 31) do not solve the identified problems of high process costs associated with the use of chlorine-containing silylating agents. Schwertfeger et al is directed quite pointedly to the use of the silylating agents shown in formula I of that patent. For all of these reasons, Smith cannot properly be combined with Schwertfeger as suggested by the Examiner.

Accordingly, the rejection of claims 1 - 4 and 6 is not supported by the cited patents and should be withdrawn.

Claim 5 is rejected under 35 U.S.C. 103(a) over Schwertfeger et al in view of Smith, as applied above, and further in view of Jansen et al (U.S. 5,705,535). The Examiner acknowledges that Schwertfeger et al does not disclose that its silicate-type lyogel can be obtained from an aqueous waterglass solution with the aid of at least one organic and/or inorganic acid via the intermediate stage

of a silicic acid sol. Jansen et al is said by the Examiner to teach such method (citing column 1, lines 45 - 67). The Examiner concludes that it would have been obvious to substitute the silicate-type lyogel of Jansen et al for the silicate-type lyogel of Schwertfeger et al with an expectation of similar results.

The rejection is respectfully traversed, since Jansen et al fails to cure the deficiency noted above regarding Schwertfeger et al and Smith. Specifically, Jansen et al fails to teach or suggest a process as defined by the claims of the present application, in which a lyogel is washed with an organic solvent, followed by surface-silylation using a disiloxane as defined in the claims. The only compounds suggested for surface modifying in Jansen have the formula R_3MX_y . (See Column 3 of Jansen et al at lines 18 - 25.) Accordingly, Applicant requests that the rejection be withdrawn.

Conclusion

In view of the foregoing amendments and remarks, Applicant respectfully submits that the claims, as amended, are in condition for allowance, which action is earnestly requested.

Respectfully submitted,



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